

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled).
2. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 1, characterized in that~~ The method of claim 16, wherein the first microstructured optical element and/or the at least one further microstructured optical element contains photonic band gap material.
3. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 1, characterized in that~~ The method of claim 16, wherein the first microstructured optical element and/or the at least one further microstructured optical element are/is designed as optical fiber(s).
4. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 3, characterized in that~~ The method of claim 3, wherein the first microstructured optical element and/or the at least one further microstructured optical element have/has a taper (~~tapered fiber~~).
5. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 3, characterized in that~~ The method of claim 3, wherein the first microstructured optical element and/or the at least one further microstructured optical element merge into one another continuously.
6. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 1, characterized in that~~ The method of claim 16, wherein the first microstructured optical element and/or the at least one further microstructured optical element are/is a photonic crystal fiber (~~microstructured fiber, holey fiber~~).

7. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 1,~~
~~characterized in that~~ The method of claim 16, wherein the first microstructured optical
element and/or the at least one further microstructured optical element are spliced together.

8. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 1,~~
~~characterized in that~~ The method of claim 16, wherein the light that emerges from the first
microstructured optical element ~~is~~ can be coupled into the at least one further microstructured
optical element with the aid of a lens arrangement.

9. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 1,~~
~~characterized in that~~ The method of claim 16, wherein the primary light source comprises a
pulsed laser.

10. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 1,~~
~~characterized in that~~ The method of claim 16, wherein the light from the primary light source
repeatedly traverses the first microstructured optical element and/or the at least one further
microstructured optical element.

11. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 1,~~
~~characterized in that~~ The method of claim 16, further comprising providing means are
~~provided~~ for selecting light components over at least one wavelength and/or at least one
wavelength region.

12. (Withdrawn –Currently Amended) ~~The light source as claimed in claim 1,~~
~~characterized in that by use in~~ The method of claim 16, wherein the light source is a
component of a flow cytometer or an endoscope or a chromatograph or a lithography
apparatus.

13. (Withdrawn –Currently Amended) ~~A~~ The method of claim 16, wherein the
light source is a component of a microscope having a light source as claimed in claim 1.

14. (Withdrawn –Currently Amended) ~~A~~ The method of claim 16, wherein the light source is a component of a scanning microscope having a light source as claimed in claim 1.

15. (Withdrawn –Currently Amended) ~~The scanning microscope as claimed in claim 14, characterized in that~~ The method of claim 14, wherein the scanning microscope is a confocal scanning microscope and/or a double confocal scanning microscope and/or an STED scanning microscope and/or an STED-4Pi scanning microscope and/or a CARS scanning microscope.

16. (Currently Amended) A method for generating illuminating light, comprising: ~~characterized by the following steps:~~

- generating spectrally spread light with the aid of a light source, the light source comprising: a first microstructured optical element that receives and spectrally spreads the light from a primary light source; and at least one further microstructured optical element that receives the spectrally spread light from the first microstructured optical element and further spreads the spectrally spread light as claimed in claim 1,
- selecting at least one illuminating light wavelength and/or at least one illuminating light wavelength region from the further spectrally spread light, and
- splitting off the illuminating light of the at least one illuminating light wavelength and/or of the at least one illuminating light wavelength region from the further spectrally spread light.

17. (Currently Amended) The method as claimed in claim 16, further comprising: ~~characterized in that the illuminating light optically excites~~ optically exciting a sample with the illuminating light.

18. (Currently Amended) The method as claimed in claim 16, further comprising: ~~characterized by the further step of:~~

- selecting at least one further illuminating light wavelength and/or at least one further illuminating light wavelength region[[,]] from the further spectrally spread light; and
- splitting off further illuminating light of the at least one further illuminating light wavelength and/or of the at least one further illuminating light wavelength region from the further spectrally spread light.

19. (Currently Amended) The method as claimed in claim 18, ~~characterized in that~~ wherein the further illuminating light effects a stimulated emission.

20 -21. (Cancelled).

22. (New) The method as claimed in claim 16, further comprising:

- optically exciting a sample with the illuminating light;
- selecting at least one further illuminating light wavelength and/or at least one further illuminating light wavelength region from the further spectrally spread light; and
- splitting off further illuminating light of the at least one further illuminating light wavelength and/or of the at least one further illuminating light wavelength region from the further spectrally spread light, wherein the further illuminating light effects a stimulated emission.

23. (New) The method as claimed in claim 16, further comprising:

- optically pumping a sample with the illuminating light;
- selecting at least one further illuminating light wavelength and/or at least one further illuminating light wavelength region from the further spectrally spread light; and
- splitting off further illuminating light of the at least one further illuminating light wavelength and/or of the at least one further illuminating light wavelength region from the further spectrally spread light; and

- optically probing the optically pumped sample with the further illuminating light.